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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,429	10/06/2000	Hajime Tabata	0505-0704P	1288

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[REDACTED] EXAMINER

NI, SUHAN

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2643

DATE MAILED: 09/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/680,429	TABATA, HAJIME	
	Examiner	Art Unit	
	Suhan Ni	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 October 2000.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-14 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) Interview Summary (PTO-413) Paper No(s) _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

1. This communication is responsive to the applicants' application filed on 10/06/2000.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 11-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 11-12, both recites the limitation of "the motorcycle helmet" in line 1.

There are insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park et al. (US-5,309,519).

Regarding claim 1, Park et al. disclose a piezo-film speaker, comprising: a flat piezo-film (1010) curvedly supported to form at least one curved portion, said flat piezo-film having at least a radius of curvature and a principal surface (Fig. 10). But Park et al. do not clearly teach that the radius is in a range of equal or larger than 20 cm or the surface is in a range equal or larger than

40 cm*cm as claimed. Since Park et al. do utilize the flat piezo-film in many applications and do not restrict to any specific configurations for the film, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide a flat piezo-film with desirable configurations, such as a slightly curved configuration (with a rather large radius and sufficient active surface area), for any suitable supporting structure, in order to generate desirable sound.

Regarding claim 2, Park et al. do not clearly teach that a radius is in a range of 21-36 cm as claimed. Since Park et al. do utilize the flat piezo-film in many applications and do not restrict to any specific configurations, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide a flat piezo-film with a properly curved configuration, such as a radius of 30 cm, for a suitable supporting structure with a 30 cm radius curved surface, in order to generate desirable sound.

Regarding claim 3, Park et al. do not clearly teach that an area is in a range of 40-100 cm*cm as claimed. Since Park et al. do utilize the flat piezo-film in many applications and do not restrict to any specific configurations, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide a flat piezo-film with a properly sized active surface area, such as 50 cm*cm, for a suitable supporting structure, in order to generate sufficient acoustic output.

Regarding claim 4, Park et al. do not clearly teach that a radius is in a range of 21-36 cm and an area is in a range of 40-100 cm*cm as claimed. Since Park et al. do utilize the flat piezo-film in many applications and do not restrict to any specific configurations, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide a flat

piezo-film with a properly curved configuration and a properly sized active surface area, such as a radius of 30 cm and an area of 50 cm*cm, for a suitable supporting structure with a 30 cm radius curved surface, for generating desirable sound with sufficient acoustic output.

Furthermore, regarding claims 1-4, it is well known in the art, that changing the radius of a curved surface of a piezoelectric-film transducer would directly effect the characteristics of the transducer, since the pattern of X, Y, Z-directional bending waves applied to the film has been rearranged. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide a flat piezo-film with a properly curved configuration and a properly sized active surface area, such as a radius of 30 cm and an area of 50 cm*cm, for a suitable supporting structure with a 30 cm radius curved surface, for generating sound with desirable acoustic characteristics and sufficient acoustic output.

Regarding claims 5-6 and 11-12, Park et al. do not clearly teach that a film with a thickness of 110 um as claimed. Since Park et al. do utilize the flat piezo-film in many applications and do not restrict to any specific configurations, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide a film or a film like with a proper thickness, such as a 110 um or 28 um thickness as a coating for any part of the piezo-film speaker, in order to generate desirable sound and make the speaker more durable.

4. Claims 7-10 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szilagyi et al. (US-5,736,808).

Regarding claims 1 and 7, Szilagyi et al. disclose a helmet (Fig. 6) having a piezo-film speaker, comprising: a flat piezo-film (10) curvedly supported to form at least one curved portion, said flat piezo-film having at least a radius of curvature and a principal surface (Fig. 1).

But Szilagyi et al. do not clearly teach that the radius is in a range of equal or larger than 20 cm or the surface is in a range equal or larger than 40 cm*cm as claimed. Since Szilagyi et al. do utilize the flat piezo-film in many applications and do not restrict to any specific configurations for the film, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide a flat piezo-film with desirable configurations, such as a slightly curved configuration (with a rather large radius and sufficient active surface area), for any suitable supporting structure, in order to generate desirable sound.

Regarding claims 4 and 8, Szilagyi et al. do not clearly teach that a radius is in a range of 21-36 cm and an area is in a range of 40-100 cm*cm as claimed. Since Szilagyi et al. do utilize the flat piezo-film in many applications and do not restrict to any specific configurations, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide a flat piezo-film with a properly curved configuration and a properly sized active surface area, such as a radius of 30 cm and an area of 50 cm*cm, for a suitable supporting structure with a 30 cm radius curved surface, for generating desirable sound with sufficient acoustic output.

Regarding claims 2 and 9, Szilagyi et al. do not clearly teach that a radius is in a range of 21-36 cm as claimed. Since Szilagyi et al. do utilize the flat piezo-film in many applications and do not restrict to any specific configurations, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide a flat piezo-film with a properly curved configuration, such as a radius of 30 cm, for a suitable supporting structure with a 30 cm radius curved surface, in order to generate desirable sound.

Regarding claims 3 and 10, Szilagyi et al. do not clearly teach that an area is in a range of 40-100 cm*cm as claimed. Since Szilagyi et al. do utilize the flat piezo-film in many

applications and do not restrict to any specific configurations, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide a flat piezo-film with a properly sized active surface area, such as 50 cm*cm, for a suitable supporting structure, in order to generate sufficient acoustic output.

Furthermore, regarding claims 1-4 and 7-10, it is well known in the art, that changing the radius of a curved surface of a piezoelectric-film transducer would directly effect the characteristics of the transducer, since the pattern of X, Y, Z-directional bending waves applied to the film has been rearranged. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide a flat piezo-film with a properly curved configuration and a properly sized active surface area, such as a radius of 30 cm and an area of 50 cm*cm, for a suitable supporting structure with a 30 cm radius curved surface, for generating sound with desirable acoustic characteristics and sufficient acoustic output.

Regarding claims 13-14, Szilagyi et al. disclose the helmet further comprising: a headliner (70); a head inner (68); and ear inners (Figs. 6-8) as claimed. But Szilagyi et al. do not clearly teach a thin inner as claimed. Since providing a thin inner for a helmet is very well known in the art, it therefore would have been obvious to one skilled in the art at the time the invention was made to provide a thin inner or thin support means for the helmet as an alternate choice, in order to provide better protection for a user.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Suhan Ni** whose telephone number is **(703)-308-9322**, and the number for fax machine is **(703)-305-9508**. The examiner can normally be reached on Monday through Thursday from 9:00 am to 7:30 pm. If it is necessary, the examiner's supervisor, **Curtis Kuntz**, can be reached at **(703) 305-4708**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is **(703) 305-3900**.

Suhan Ni



SUHAN NI
PATENT EXAMINER

09/23/2002